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2/9/1

DIALOG(R)File 351: Derwent WPI

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0014905818 *Drawing available*

WPI Acc no: 2005-253598/200526

XRPX Acc No: N2005-208833

Semiconductor device has n-type metal insulated semiconductor FET with crystal orientation of protruding semiconductor region, formed such that side surfaces are {100} surfaces orthogonal to {100} surface parallel to substrate

Patent Assignee: NEC CORP (NIDE)

Inventor: NOMURA M; OGURA A; TAKEDA K; TAKEUCHI K; TANAKA M;
TATSUMI T; TERASHIMA K; WAKABAYASHI H; WATANABE K; YAMAGAMI S

Patent Family (3 patents, 106 countries)							
Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2005022637	A1	20050310	WO 2004JP12385	A	20040827	200526	B
US 20070187682	A1	20070816	WO 2004JP12385	A	20040827	200755	E
			US 2006569451	A	20060926		
JP 2005513479	X	20071101	WO 2004JP12385	A	20040827	200780	E
			JP 2005513479	A	20040827		

Priority Applications (no., kind, date): JP 2003304753 A 20030828; JP 2004235346 A 20040812

Patent Details					
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
WO 2005022637	A1	JA	59	19	
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW				
Regional Designated States,Original	AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW				
US 20070187682	A1	EN			PCT Application WO 2004JP12385
JP 2005513479	X	JA	32		PCT Application WO 2004JP12385

					Based on OPI patent	WO 2005022637
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Alerting Abstract WO A1

NOVELTY - The device has n-type and p-type metal insulated semiconductor FETs (MISFETs) (2001,2002) in which the crystal orientations of the protruding semiconductor regions are formed such that the side surfaces are respectively {100} and {110} surfaces that are orthogonal to a {100} surface parallel to the substrate.

USE - Semiconductor device having fin-like metal insulated semiconductor FETs (MISFETs).

ADVANTAGE - The operational speed of the semiconductor device is improved.

DESCRIPTION OF DRAWINGS - The figure shows the top views explaining the crystal orientation of protruding regions of the semiconductor device.

2001 n-type MISFET

2002 p-type MISFET

Title Terms /Index Terms/Additional Words: SEMICONDUCTOR; DEVICE; N; TYPE; METAL; INSULATE; FET; CRYSTAL; ORIENT; PROTRUDE; REGION; FORMING; SIDE; SURFACE; ORTHOGONAL; PARALLEL; SUBSTRATE

Class Codes

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
H01L-0021/8238	A	I		R	20060101
H01L-0021/8238	A	I	F	B	20060101
H01L-0027/08	A	I	L	B	20060101
H01L-0027/092	A	I		R	20060101
H01L-0027/092	A	I	L	B	20060101
H01L-0029/04	A	I	F	B	20060101
H01L-0029/423	A	I	L	B	20060101
H01L-0029/49	A	I	L	B	20060101
H01L-0029/786	A	I	L	B	20060101
H01L-0021/70	C	I		R	20060101
H01L-0021/70	C	I		B	20060101
H01L-0027/08	C	I		B	20060101
H01L-0027/085	C	I		R	20060101
H01L-0027/085	C	I		B	20060101
H01L-0029/02	C	I	F	B	20060101
H01L-0029/40	C	I		B	20060101

H01L-0029/66	C	I		B	20060101		
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ECLA: H01L-021/336S2, H01L-021/8238C, H01L-021/8238G, H01L-021/8238G6, H01L-027/092, H01L-029/04B, H01L-029/78S, H01L-029/78S4R

US Classification, Current Main: 257-064000

US Classification, Issued: 25764

File Segment: EPI;

DWPI Class: U11; U12

Manual Codes (EPI/S-X): U11-C18A3; U11-D01B3; U12-D02A

Original Publication Data by Authority

Japan

Publication No. JP 2005513479 X (Update 200780 E)

Publication Date: 20071101

Language: JA (32 pages)

Application: WO 2004JP12385 A 20040827 (PCT Application)

JP 2005513479 A 20040827 (Local application)

Priority: JP 2003304753 A 20030828

JP 2004235346 A 20040812

Related Publication: WO 2005022637 A (Based on OPI patent)

Original IPC: H01L-21/70(B,I,M,98,20060101,20071005,C) H01L-

21/8238(B,I,H,JP,20060101,20071005,A,F) H01L-

27/08(B,I,H,JP,20060101,20071005,A,L) H01L-27/08(B,I,M,98,20060101,20071005,C)

H01L-27/085(B,I,M,98,20060101,20071005,C) H01L-

27/092(B,I,H,JP,20060101,20071005,A,L) H01L-

29/40(B,I,M,98,20060101,20071005,C) H01L-

29/423(B,I,H,JP,20060101,20071005,A,L) H01L-

29/49(B,I,H,JP,20060101,20071005,A,L) H01L-29/66(B,I,M,98,20060101,20071005,C)

H01L-29/786(B,I,H,JP,20060101,20071005,A,L)

Current IPC: H01L-21/70(B,I,M,98,20060101,20071005,C) H01L-

21/8238(B,I,H,JP,20060101,20071005,A,F) H01L-

27/08(B,I,H,JP,20060101,20071005,A,L) H01L-27/08(B,I,M,98,20060101,20071005,C)

H01L-27/085(B,I,M,98,20060101,20071005,C) H01L-

27/092(B,I,H,JP,20060101,20071005,A,L) H01L-

29/40(B,I,M,98,20060101,20071005,C) H01L-

29/423(B,I,H,JP,20060101,20071005,A,L) H01L-

29/49(B,I,H,JP,20060101,20071005,A,L) H01L-29/66(B,I,M,98,20060101,20071005,C)

H01L-29/786(B,I,H,JP,20060101,20071005,A,L)

United States

Publication No. US 20070187682 A1 (Update 200755 E)

Publication Date: 20070816

Semiconductor device having fin-type effect transistor

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Language: EN

Application: WO 2004JP12385 A 20040827 (PCT Application)

US 2006569451 A 20060926 (Local application)

Priority: JP 2003304753 A 20030828

JP 2004235346 A 20040812

Original IPC: H01L-29/02(B,I,M,98,20060101,20070816,C) H01L-29/04(B,I,H,US,20060101,20070816,A,F)

Current IPC: H01L-21/70(R,I,M,EP,20060101,20051008,C) H01L-21/8238(R,I,M,EP,20060101,20051008,A) H01L-27/085(R,I,M,EP,20060101,20051008,C) H01L-27/092(R,I,M,EP,20060101,20051008,A) H01L-29/02(B,I,H,US,20060101,20070816,C,F) H01L-29/04(B,I,H,US,20060101,20070816,A,F)

Current ECLA class: H01L-21/336S2 H01L-21/8238C H01L-21/8238G H01L-21/8238G6 H01L-27/092 H01L-29/04B H01L-29/78S H01L-29/78S4R

Current US Class (main): 257-064000

Original US Class (main): 25764

Original Abstract:

There is provided a semiconductor device comprising an n-type and a p-type field effect transistors, meeting the conditions that in terms of a crystal orientation of the protruding

semiconductor region constituting the n-type field effect transistor, its plane parallel to the substrate is substantially a {100} plane and its side surface is a {100} plane substantially orthogonal to the {100} plane, and that in terms of a crystal orientation of the protruding semiconductor region constituting the p-type field effect transistor, its plane parallel to the substrate is substantially a {100} plane and its side surface is a {110} plane substantially orthogonal to the {100} plane.

Claim:

1. 1. A semiconductor device comprising an n-type and a p-type field effect transistors having a protruding semiconductor region with a channel in its side surface, a gate electrode formed at least on the side surface via an insulating film, and a source and a drain regions formed in the semiconductor region such that the gate electrode is sandwiched by the regions, meeting the conditions:
 - that in terms of a crystal orientation of the protruding semiconductor region constituting the n-type field effect transistor, its plane parallel to a substrate is substantially a {100} plane and its side surface is substantially a {100} plane orthogonal to the {100} plane, and
 - that in terms of a crystal orientation of the protruding semiconductor region constituting the p-type field effect transistor, its plane parallel to the substrate is substantially a {100} plane.

WIPO

Publication No. WO 2005022637 A1 (Update 200526 B)

Publication Date: 20050310

SEMICONDUCTOR DEVICE HAVING FIN-TYPE FIELD EFFECT TRANSISTORS

DISPOSITIF A SEMI-CONDUCTEURS AYANT DES TRANSISTORS A EFFET DE CHAMP DE TYPE A AILETTES

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Language: JA (59 pages, 19 drawings)
Application: WO 2004JP12385 A 20040827 (Local application)
Priority: JP 2003304753 A 20030828
JP 2004235346 A 20040812
Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(Regional Original) AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
Original IPC: H01L-27/092(A)
Current IPC: H01L-21/70(R,A,I,M,EP,20060101,20051008,C) H01L-21/8238(R,I,M,EP,20060101,20051008,A) H01L-27/085(R,I,M,EP,20060101,20051008,C) H01L-

27/092(R,I,M,EP,20060101,20051008,A)

Current ECLA class: H01L-21/336S2 H01L-21/8238C H01L-21/8238G H01L-21/8238G6 H01L-27/092 H01L-29/04B H01L-29/78S H01L-29/78S4R

Original Abstract:

A semiconductor device including n-type and p-type field effect transistors, wherein the crystal orientation of a protruding semiconductor region constituting the n-type field effect transistor satisfies such conditions that its surface parallel to the substrate is substantially a {100} surface and its side surfaces are substantially {100} surfaces orthogonal to the foregoing {100} surface, and wherein the crystal orientation of a protruding semiconductor region constituting the p-type field effect transistor satisfies such conditions that its surface parallel to the substrate is substantially a {100} surface and its side surfaces are substantially {110} surfaces orthogonal to the foregoing {100} surface.

L'invention concerne un dispositif a semi-conducteurs comprenant des transistors a effet de champ de types n et p dont l'orientation cristalline d'une zone de semi-conducteur faisant saillie constituant le transistor a effet de champ de type n repond aux conditions suivantes: sa surface parallele au substrat constitue sensiblement une surface (100) et ses surfaces laterales sont sensiblement des surfaces (100) orthogonales par rapport a la surface avant (100). L'orientation cristalline d'une region de semi-conducteur faisant saillie formant le transistor a effet de champ de type p repond aux conditions suivantes: sa surface parallele au substrat est sensiblement une surface (100) et ses surfaces laterales sont sensiblement des surfaces orthogonales par rapport a la surface avant (100).

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DIALOG(R)File 351: Derwent WPI

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0013817319 *Drawing available*

WPI Acc no: 2003-586963/200355

Related WPI Acc No: 2003-569490; 2004-365530; 2004-420709; 2003-587005

XRAM Acc no: C2003-158787

XRPX Acc No: N2003-467416

Probe for use with laser desorption/ionization mass spectrometers, useful; for analyzing proteins, has support having electroconductive target surface, comprising a micro array with many discrete target areas

Patent Assignee: SENSE PROTEOMIC LTD (SENS-N)

Inventor: BLACKBURN J M; KOOPMAN J; KOOPMANN J

Patent Family (8 patents, 100 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
WO 2003054543	A2	20030703	WO 2002EP14859	A	20021220	200355	B
GB 2384778	A	20030806	GB 200229834	A	20021220	200359	E
AU 2002366875	A1	20030709	AU 2002366875	A	20021220	200428	E
EP 1464069	A2	20041006	EP 2002805351	A	20021220	200465	E
			WO 2002EP14859	A	20021220		
JP 2005513479	W	20050512	WO 2002EP14859	A	20021220	200532	E
			JP 2003555205	A	20021220		
US 7057165	B2	20060606	US 2002329052	A	20021223	200638	E
AU 2002366875	A2	20030709	AU 2002366875	A	20021220	200654	E
AU 2002366875	B2	20080821	AU 2002366875	A	20021220	200918	E

Priority Applications (no., kind, date): GB 200130747 A 20011221; GB 200216387 A 20020715; GB 200224872 A 20021025

Patent Details						
Patent Number	Kind	Lan	Pgs	Draw	Filing Notes	
WO 2003054543	A2	EN	56	19		
National Designated States,Original	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
Regional Designated States,Original	AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW					
AU 2002366875	A1	EN			Based on OPI patent	WO 2003054543
EP 1464069	A2	EN			PCT Application	WO 2002EP14859
					Based on OPI patent	WO 2003054543
Regional Designated States,Original	AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
JP 2005513479	W	JA	40		PCT Application	WO 2002EP14859
					Based on OPI patent	WO 2003054543
AU 2002366875	A2	EN			Based on OPI patent	WO 2003054543
AU 2002366875	B2	EN			Based on OPI patent	WO 2003054543

Alerting Abstract WO A2

NOVELTY - A probe comprising a support having an electroconductive target surface, which comprises a micro array having number of discrete target areas presenting capture moiety(s), is new.

DESCRIPTION - INDEPENDENT CLAIMS are also included for:

1. production of protein microarray for use with laser desorption/ionization mass spectrometer, which involves placing probe and depositing protein in registration with protein capturing moieties in discrete target area; analysis of protein microarray, which involves subjecting the protein microarray to laser desorption/ionization mass spectrometry; and
2. analysis of proteins, which involves contacting the probe with protein(s) and performing laser desorption/ionization mass spectrometry on protein present on the probe surface.

USE - For use with laser desorption/ionization mass spectrometer, for producing protein microarray, used in analyzing analytes, particularly proteins. Also used in proteomics for quantitative identification and post translational modification of proteins.

ADVANTAGE - The probe upon which a microarray has been fabricated, enables interrogation of protein-small molecule interactions in label-free manner by desorption and ionization of analytes e.g. proteins, drugs, carbohydrates, DNA and RNA. The probe and methods are particularly useful in drug discovery e.g. in hit series evaluation, lead optimization, predictive toxicogenomics and metabolite profiling. The probe enables immobilization of proteins, such that leaching of protein from the surface is avoided. The probes and protein microarrays effectively analyses and screens various reactions.

DESCRIPTION OF DRAWINGS - The figure shows random and orientated coupling of proteins on a probe for example on MALDI target, microtiter plate or microscope glass slide.

Technology Focus

BIOTECHNOLOGY - Preferred Support: The support is glass slide or matrix assisted laser desorption/ionization (MALDI) target.

Preferred Arrangement: The probe has 10-10000 discrete target areas of less than 1000 μm^2 , preferably less than 78 μm^2 , arranged circularly or in matrices on target surface. The matrices comprises at least 2 rows and 2 columns of discrete target areas. The spacing between adjacent discrete target areas in matrix is less than 1 mm. The probe further comprises captured analyte such as protein. The protein is fusion protein, such as phleomycin/zeocin resistance. The captured analyte further has a molecule bound to it. The molecule is small molecule, protein or nucleic acid. The surface of the discrete target area is planar or flat bottomed wells.

Preferred Moieties: The analyte capture moieties (ACM) are protein capture moieties (PCM), excluding an antibody and small molecules less than 2 kDa, preferably less than 500 Da. ACM are homogeneously disposed in discrete target areas, in a defined

orientation. ACM having high affinity for their binding partner is attached directly, indirectly or through linker molecules such as polyamino acid or an alkane thiol, to the electroconductive target surface. The polyamino acid is poly-L-lysine, poly-L-aspartic acid and/or poly-L glutamic acid. PCM is streptavidin, avidin, neutravidin or bleomycin. At least one PCM binds biotin or bleomycin resistant protein. ACM is provided in a layer, which is resistant to non-specific protein binding, comprising polymer or self assembled monolayer (SAM), which are responsible for the general protein repellent nature of the layer. ACM is attached to the probe surface through polymer and/or linker molecules.

Preferred Method: Analysis of proteins in protein mixture involves:

- A. determining the mass of the protein molecule;
- B. performing a digestion upon a replicate sample of the protein on probe or probe surface;
- C. removing unbound test molecules from the probe surface; and
- D. performing laser desorption/ionization mass spectrometry on the peptide.

POLYMERS - Preferred Polymer: The polymer is polyethylene glycol, dextran, polyurethane or polyacrylamide. The polymer is bound to the probe surface through linker molecule(s).

Preferred Properties: The binding affinity (K_d) between ACM and its binding partner is 10^{-7} M, preferably 10^{-15} M. The probe binds the analyte at a concentration of 10^{15} molecules/1000 μm^2 , preferably less than 10^6 molecules/1000 μm^2 .

INORGANIC CHEMISTRY - Preferred Component: The electroconductive surface of the probe is a metal selected from gold, silver, platinum, iridium, iron, nickel, cobalt, copper and their alloys; or a semiconductor selected from silicon, graphite and germanium.

Preferred Method: The analyte is printed on a surface using inkjet printing, piezo electric printing or contact printing. The contact printing is applied using a split pin, solid pin or hollow pin.

ORGANIC CHEMISTRY - Preferred Arrangement: The energy absorbing molecules (EAM) are deposited in registration with the discrete target area on which a protein has been captured. EAM denatures and unbinds the protein from PCM leaving denatured protein in close proximity to PCM on the surface. EAM are present as a homogeneous layer in discrete target area in registration with PCM and captured protein. The homogeneous layer is substantially continuous such that individual crystals are not visible at a 100 fold magnification and there are no visible gaps between neighboring crystals. The homogeneous layer has uniform depth, such that there is no apparent variation in crystal size at 100 fold magnification. EAM are deposited onto the surface in a using a non-aqueous solvent.

Preferred Solvent: The non-aqueous solvent is an organic solvent. such as acetone or butanone. The non-aqueous solvent further contains modifiers such as glycerol,

polyethyleneglycol or thioglycerol, which controls evaporation rate, such that evaporation of non-aqueous solvent occurs after the energy absorbing molecules are deposited. EAM are deposited in solvent mixture containing 80-99.9%, preferably 99% of acetone, 20-0.1%, preferably 1% of glycerol (vol/vol).

Preferred Compound: EAM comprises crystals of alpha-cyano-4-hydroxy-cinnamic acid, sinapinic acid, gentisic acid, nifidine, succinic acid, 1,8,9,-anthracenitriol, 3-Indoleacrylic acid, 2-(hydroxyphenylazo) benzoe-acid and/or 4-nitroanilin.

Title Terms /Index Terms/Additional Words: PROBE; LASER; DESORB; IONISE; MASS; SPECTROSCOPE; USEFUL; PROTEIN; SUPPORT; ELECTROCONDUCTING; TARGET; SURFACE; COMPRISE; MICRO; ARRAY; DISCRETE; AREA

Class Codes

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
G01N-027/64			Main		"Version 7"
G01N-027/62; G01N-033/483; G01N-033/53; G01N-037/00			Secondary		"Version 7"
A61K-0047/48	A	I		R	20060101
B01D-0059/44	A	I	F	B	20060101
C07K-0014/00	A	I		R	20060101
G01N-0027/62	A	I	L	R	20060101
G01N-0027/64	A	I	F	R	20060101
G01N-0033/483	A	I	L	R	20060101
G01N-0033/53	A	I	L	R	20060101
G01N-0033/543	A	I	F	B	20060101
G01N-0033/94	A	I		R	20060101
G01N-0037/00	A	I	L	R	20060101
H01J-0049/04	A	I		R	20060101
H01J-0049/16	A	I		R	20060101
A61K-0047/48	A	I	L	B	20060101
C07K-0014/00	A	I	L	B	20060101
G01N-0027/62	A	I	L	B	20060101
G01N-0027/64	A	I	F	B	20060101
G01N-0033/483	A	I	L	B	20060101
G01N-0033/53	A	I	L	B	20060101
G01N-0033/94	A	I	L	B	20060101

G01N-0037/00	A	I	L	B	20060101		
H01J-0049/04	A	I	L	B	20060101		
H01J-0049/16	A	I	L	B	20060101		
A61K-0047/48	C	I		R	20060101		
B01D-0059/00	C	I	F	B	20060101		
C07K-0014/00	C	I		R	20060101		
G01N-0027/62	C	I	L	R	20060101		
G01N-0027/64	C	I	F	R	20060101		
G01N-0033/483	C	I	L	R	20060101		
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G01N-0033/543	C	I	L	B	20060101		
G01N-0033/94	C	I		R	20060101		
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ECLA: A61K-047/48T2C8H, C07K-014/00, G01N-033/94D, H01J-049/04, H01J-049/16A

ICO: M07K-203:00, S01N-415:00, T01J-249:04B, T01J-249:04S1

US Classification, Current Main: 250-281000; Secondary: 250-288000, 422-068100

US Classification, Issued: 250281, 250288, 42268.1

Japan National Classification FI Terms			
FI Term	Facet	Rank	Type
G01N-027/62 F			
G01N-027/62 V			

G01N-027/64 B	
G01N-033/483 Z	
G01N-033/53 D	
G01N-033/53 U	
G01N-037/00 102	

Japan National Classification F Terms		
Theme	ViewPoint + Figure	Additional Code
2G041		
2G045		
2G058		
2G041	AA06	
2G041	CA01	
2G041	DA04	
2G045	DA13	
2G045	DA14	
2G045	DA36	
2G041	EA01	
2G041	EA03	
2G041	EA11	
2G041	FA11	
2G041	FA12	
2G045	FA40	
2G045	FB02	
2G041	GA06	
2G041	JA02	
2G041	JA04	
2G041	JA06	
2G041	JA07	
2G041	JA08	
2G041	JA09	
2G041	LA07	

File Segment: CPI; EPI

DWPI Class: B04; D16; S03; V05

Manual Codes (EPI/S-X): S03-E10A8; S03-E14H4; S03-E14H5; S03-E15; V05-J01A1;

V05-J01K

Manual Codes (CPI/A-N): B04-B03C; B04-C03; B04-E01; B04-E05; B04-N04; B05-A02; B05-A03A; B05-A03B; B05-B02C; B05-C06; B07-A02B; B07-D12; B07-F01; B10-A12C; B11-C08E5; B11-C08E6; B11-C08F; B12-K04E; B12-K04F; D05-H09; D05-H10; D05-H12; D05-H12D1; D05-H18

Chemical Indexing

Derwent Registry Numbers: 1666-U; 1670-U; 1857-U; 2044-U

Chemical Fragment Codes (M1):

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02 M905 M417 M423 M424 M430 M740 M750 M782 N102 N120 P831 Q233 Q505
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184611-M
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H1 H101 H102 H121 H182 H4 H405 H424 H484 H5 H522 H8 J0 J014 J3
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M312
M313 M315 M321 M322 M323 M331 M332 M342 M343 M344 M349 M371 M373
M381
M392 M393 M413 M423 M424 M430 M510 M523 M530 M540 M740 M750 M782
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88971-D 88971-K 88971-M
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RA0497-D RA0497-K RA0497-M 88056-A 88056-D 88056-K 88056-M
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19 M905 M417 M423 M424 M430 M740 M782 N102 N120 Q233 RA00I9-K RA00I9-M
184613-K 184613-M
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RA035M-M 104379-K 104379-M
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23 M905 M904 M910 H4 H402 H482 H5 H589 H8 M280 M312 M323 M332 M342
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R02044-K R02044-M 900-K 900-M 900-U

Chemical Fragment Codes (M2):

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96038-U

09 M905 M904 C106 C730 C810 M411 M424 M430 M740 M782 N102 N120 Q233
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R03034-K R03034-M 587-K 587-M

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R03036-K
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15 M905 M904 A677 C810 M411 M424 M430 M740 M782 N102 N120 Q233
R07079-K
R07079-M 4955-K 4955-M

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R03247-K
R03247-M 140-K 140-M

17 M905 M904 A547 C810 M411 M424 M430 M740 M782 N102 N120 Q233
R05319-K
R05319-M 856-K 856-M

18 M905 M904 A679 C810 M411 M424 M430 M740 M782 N102 N120 Q233
R03080-K
R03080-M 96353-K 96353-M

Chemical Fragment Codes (M6):

24 M905 P831 Q233 Q505 R501 R502 R515 R521 R522 R528 R614 R627 R637
R639

Specific Compound Numbers: RA012P-A; RA012P-D; RA012P-K; RA012P-M;
RA00H3-A; RA00H3-D; RA00H3-K; RA00H3-M; RA00H1-A; RA00H1-D; RA00H1-K;
RA00H1-M; RA00NS-A; RA00NS-D; RA00NS-K; RA00NS-M; RA01T5-A;
RA01T5-D; RA01T5-K; RA01T5-M; RA0497-A; RA0497-D; RA0497-K; RA0497-M;
RA06VU-A; RA06VU-D; RA06VU-K; RA06VU-M; RA00I9-K; RA00I9-M; RA035M-K;
RA035M-M; R16492-K; R16492-M; R01857-K; R01857-M; R16573-K; R16573-M;
R02044-K; R02044-M; R01670-K; R01670-M; R01778-K; R01778-M; R01666-K;
R01666-M; R05099-K; R05099-M; R03034-K; R03034-M; R03084-K; R03084-M;
R03036-K; R03036-M; R07079-K; R07079-M; R03247-K; R03247-M; R05319-K;
R05319-M; R03080-K; R03080-M

Derwent Chemistry Resource Numbers: (Linked) 105730-A; 105730-D; 105730-K;
105730-M; 184616-A; 184616-D; 184616-K; 184616-M; 184611-A; 184611-D; 184611-K;
184611-M; 93605-A; 93605-D; 93605-K; 93605-M; 88971-A; 88971-D; 88971-K;
88971-M; 88056-A; 88056-D; 88056-K; 88056-M; 107848-A; 107848-D; 107848-K;
107848-M; 184613-K ; 184613-M; 104379-K; 104379-M; 104486-K; 104486-M; 92818-

K; 92818-M; 92818-U; 900-K; 900-M; 900-U; 108236-K; 108236-M; 108236-U; 96038-K; 96038-M; 96038-U; 200703-K; 200703-M; 107015-K; 107015-M; 107015-U; 70-K; 70-M; 587-K; 587-M; 116-K; 116-M; 90-K; 90-M; 4955-K; 4955-M; 140-K; 140-M; 856-K; 856-M; 96353-K; 96353-M; 105730-CL; 105730-DET; 184616-CL; 184616-DET; 184611-CL; 184611-DET; 93605-CL; 93605-DET; 88971-CL; 88971-DET ; 88056-CL; 88056-DET; 107848-CL; 107848-DET; 96038-CL; 200703-CL; 107015-CL; 70-CL; 587-CL; 116-CL; 90-CL; 4955-CL; 140-CL; 856-CL; 96353-CL; 184613-CL; 104379-CL; 104486-CL; 92818-CL; 900-CL
(Unlinked) 107015-U; 108236-U; 900-U; 92818-U; 96038-U

Key Word Indexing

1 105730-DET 184616-DET 184611-DET 93605-DET 88971-DET 88056-DET
107848-DET 96038-CL 200703-CL 107015-CL 70-CL 587-CL 116-CL 90-CL
4955-CL 140-CL 856-CL 96353-CL 184613-CL 104379-CL 104486-CL 92818-
CL
900-CL

Original Publication Data by Authority

Australia

Publication No. AU 2002366875 A1 (Update 200428 E)

Publication Date: 20030709

Assignee: SENSE PROTEOMIC LTD (SENS-N)

Inventor: BLACKBURN J M

KOOPMANN J

Language: EN

Application: AU 2002366875 A 20021220 (Local application)

Priority: GB 200130747 A 20011221

GB 200216387 A 20020715

GB 200224872 A 20021025

Related Publication: WO 2003054543 A (Based on OPI patent)

Original IPC: G01N-33/543(A)

Current IPC: A61K-47/48(R,I,M,EP,20060101,20051008,A) A61K-

47/48(R,I,M,EP,20060101,20051008,C) C07K-14/00(R,I,M,EP,20060101,20051008,A)

C07K-14/00(R,I,M,EP,20060101,20051008,C) G01N-

27/62(R,I,M,JP,20060101,20051220,A,L) G01N-

27/62(R,I,M,JP,20060101,20051220,C,L) G01N-

27/64(R,I,M,JP,20060101,20051220,A,F) G01N-

27/64(R,I,M,JP,20060101,20051220,C,F) G01N-

33/483(R,I,M,JP,20060101,20051220,A,L) G01N-

33/483(R,I,M,JP,20060101,20051220,C,L) G01N-

33/53(R,I,M,JP,20060101,20051220,A,L) G01N-

33/53(R,I,M,JP,20060101,20051220,C,L) G01N-

33/94(R,I,M,EP,20060101,20051008,A) G01N-33/94(R,I,M,EP,20060101,20051008,C)

G01N-37/00(R,I,M,JP,20060101,20051220,A,L) G01N-

37/00(R,I,M,JP,20060101,20051220,C,L) H01J-49/02(R,I,M,EP,20060101,20051008,C)
H01J-49/04(R,I,M,EP,20060101,20051008,A) H01J-
49/10(R,I,M,EP,20060101,20051008,C) H01J-49/16(R,I,M,EP,20060101,20051008,A)
Current ECLA class: A61K-47/48T2C8H C07K-14/00 G01N-33/94D H01J-49/04 H01J-
49/16A
Current ECLA ICO class: M07K-203:00 S01N-415:00 T01J-249:04B T01J-249:04S1

Publication No. AU 2002366875 A2 (Update 200654 E)

Publication Date: 20030709

Assignee: SENSE PROTEOMIC LTD (SENS-N)

Inventor: BLACKBURN J M

KOOPMANN J

Language: EN

Application: AU 2002366875 A 20021220 (Local application)

Priority: GB 200130747 A 20011221

GB 200216387 A 20020715

GB 200224872 A 20021025

Related Publication: WO 2003054543 A (Based on OPI patent)

Original IPC: G01N-33/543(B,I,H,AU,20060101,20060101,A,F)

Current IPC: A61K-47/48(R,I,M,EP,20060101,20051008,A) A61K-

47/48(R,I,M,EP,20060101,20051008,C) C07K-14/00(R,I,M,EP,20060101,20051008,A)

C07K-14/00(R,I,M,EP,20060101,20051008,C) G01N-

27/62(R,I,M,JP,20060101,20051220,A,L) G01N-

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H01J-49/04(R,I,M,EP,20060101,20051008,A) H01J-

49/10(R,I,M,EP,20060101,20051008,C) H01J-49/16(R,I,M,EP,20060101,20051008,A)

Current ECLA class: A61K-47/48T2C8H C07K-14/00 G01N-33/94D H01J-49/04 H01J-
49/16A

Current ECLA ICO class: M07K-203:00 S01N-415:00 T01J-249:04B T01J-249:04S1

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Assignee: SENSE PROTEOMIC LTD (SENS-N)

Inventor: BLACKBURN J M

KOOPMANN J

Language: EN

Application: AU 2002366875 A 20021220 (Local application)

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GB 200216387 A 20020715

GB 200224872 A 20021025

Related Publication: WO 2003054543 A (Based on OPI patent)

Original IPC: A61K-47/48(B,I,M,EP,20060101,20051008,A,L) A61K-

47/48(B,I,M,98,20060101,20051008,C) C07K-

14/00(B,I,M,EP,20060101,20051008,A,L) C07K-

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49/16(B,I,M,EP,20060101,20051008,A,L)

Current IPC: A61K-47/48(B,I,M,EP,20060101,20051008,A,L) A61K-

47/48(B,I,M,98,20060101,20051008,C) C07K-

14/00(B,I,M,EP,20060101,20051008,A,L) C07K-

14/00(B,I,M,98,20060101,20051008,C) G01N-27/62(B,I,M,JP,20060101,20051220,A,L)

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27/64(B,I,M,JP,20060101,20051220,A,F) G01N-27/64(B,I,M,98,20060101,20051220,C)

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33/94(B,I,M,98,20060101,20051008,C) G01N-37/00(B,I,M,JP,20060101,20051220,A,L)

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49/02(B,I,M,98,20060101,20051008,C) H01J-49/04(B,I,M,EP,20060101,20051008,A,L)

H01J-49/10(B,I,M,98,20060101,20051008,C) H01J-

49/16(B,I,M,EP,20060101,20051008,A,L)

EPO

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Publication Date: 20041006

SONDE FUR DIE MASSENSPEKTROMETRIE

PROBE FOR MASS SPECTROMETRY

SONDE POUR SPECTROMETRIE DE MASSE

Assignee: SENSE PROTEOMIC LIMITED, Unit 4, The Switchback, Gardner Road,
Maidenhead, Berkshire SL6 7RJ, GB (SENS-N)

Inventor: KOOPMANN, Jens-Oliver, Unit 4, The Switchback, Gardner Road,
Maidenhead, Berkshire SL6 7RJ, GB
BLACKBURN, Jonathan M., c/o Dept. of Biotechnology, University of the Western
Cape, Belville 7535, Capetown, SA
Agent: Crump, Julian Richard John, Mintz Levin Cohn Ferris Glovsky and Popeo
Intellectual Property LLP, The Rectory, 9, Ironmonger Lane, London EC2V 8EY, GB
Language: EN
Application: EP 2002805351 A 20021220 (Local application)
WO 2002EP14859 A 20021220 (PCT Application)
Priority: GB 200130747 A 20011221
GB 200216387 A 20020715
GB 200224872 A 20021025
Related Publication: WO 2003054543 A (Based on OPI patent)
Designated States: (Regional Original) AL AT BE BG CH CY CZ DE DK EE ES FI FR
GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR
Original IPC: H01J-49/04(A)
Current IPC: A61K-47/48(R,I,M,EP,20060101,20051008,C) C07K-
14/00(R,I,M,EP,20060101,20051008,A) C07K-14/00(R,I,M,EP,20060101,20051008,C)
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33/53(R,I,M,JP,20060101,20051220,C,L) G01N-
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37/00(R,I,M,JP,20060101,20051220,C,L) H01J-49/02(R,I,M,EP,20060101,20051008,C)
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49/10(R,I,M,EP,20060101,20051008,C) H01J-49/16(R,I,M,EP,20060101,20051008,A)
A61K-47/48(R,I,M,EP,20060101,20051008,A)
Current ECLA class: A61K-47/48T2C8H C07K-14/00 G01N-33/94D H01J-49/04 H01J-
49/16A
Current ECLA ICO class: M07K-203:00 S01N-415:00 T01J-249:04B T01J-249:04S1
Original Abstract:
The present invention relates to a probe for the analysis of one or more analytes,
particularly proteins or compounds capable of binding or otherwise interacting therewith,
by laser desorption/ ionisation mass spectrometry, more particularly MALDI MS. It also
relates to a protein microarray, a method of producing a protein microarray and a method
of analysing a protein microarray. The probe comprises a support having an
electroconductive target surface thereon characterized in that the target surface comprises
a micro array having a plurality of discrete target areas presenting one or more analyte
capture moieties. Each discrete target area has an area of less than 1000microm², more
preferably still less than 500microm², and more preferably still less than 100microm².

Great Britain

Publication No. GB 2384778 A (Update 200359 E)

Publication Date: 20030806

Assignee: SENSE PROTEOMIC LTD; GB (SENS-N)

Inventor: KOOPMAN J

BLACKBURN J M

Language: EN

Application: GB 200229834 A 20021220 (Local application)

Priority: GB 200130747 A 20011221

GB 200216387 A 20020715

Original IPC: G01N-33/68(A) B01J-19/00(-) G01N-33/543(C)

Current IPC: H01J-49/02(R,I,M,EP,20060101,20051008,C) H01J-

49/04(R,I,M,EP,20060101,20051008,A) H01J-49/10(R,I,M,EP,20060101,20051008,C)

H01J-49/16(R,I,M,EP,20060101,20051008,A)

Current ECLA class: H01J-49/04 H01J-49/16A

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Japan

Publication No. JP 2005513479 W (Update 200532 E)

Publication Date: 20050512

Language: JA (40 pages)

Application: WO 2002EP14859 A 20021220 (PCT Application)

JP 2003555205 A 20021220 (Local application)

Priority: GB 200130747 A 20011221

GB 200216387 A 20020715

GB 200224872 A 20021025

Related Publication: WO 2003054543 A (Based on OPI patent)

Original IPC: G01N-27/64(A) G01N-27/62(B) G01N-33/483(B) G01N-33/53(B) G01N-37/00(B)

Current IPC: G01N-27/64(A) G01N-27/62(B) G01N-33/483(B) G01N-33/53(B) G01N-37/00(B)

Current ECLA class: A61K-47/48T2C8H C07K-14/00 G01N-33/94D H01J-49/04 H01J-49/16A

Current ECLA ICO class: M07K-203:00 S01N-415:00 T01J-249:04B T01J-249:04S1

Current JP FI-Terms: G01N-27/62 F G01N-27/62 V G01N-27/64 B G01N-33/483 Z G01N-33/53 D G01N-33/53 U G01N-37/00 102

Current JP F-Terms: 2G041 2G045 2G058 2G041AA06 2G041CA01 2G041DA04 2G045DA13 2G045DA14 2G045DA36 2G041EA01 2G041EA03 2G041EA11 2G041FA11 2G041FA12 2G045FA40 2G045FB02 2G041GA06 2G041JA02 2G041JA04 2G041JA06 2G041JA07 2G041JA08 2G041JA09 2G041LA07

United States

Publication No. US 7057165 B2 (Update 200638 E)

Publication Date: 20060606

Probe for mass spectrometry

Assignee: Sense Proteomic Ltd., GB (SENS-N)

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Inventor: Koopman, Jens-Oliver, Babraham, GB Residence: GB Nationality: GB

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Agent: Elrifi, Ivor R.

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Language: EN

Application: US 2002329052 A 20021223 (Local application)

Priority: GB 200130747 A 20011221

GB 200216387 A 20020715

GB 200224872 A 20021025

Original IPC: B01D-59/00(B,I,H,98,20060101,20060606,C,F) B01D-59/44(B,I,H,US,20060101,20060606,A,F)

Current IPC: A61K-47/48(R,I,M,EP,20060101,20051008,A) A61K-

47/48(R,I,M,EP,20060101,20051008,C) B01D-

59/00(B,I,H,US,20060101,20060606,C,F) B01D-

59/44(B,I,H,US,20060101,20060606,A,F) C07K-

14/00(R,I,M,EP,20060101,20051008,A) C07K-14/00(R,I,M,EP,20060101,20051008,C)

G01N-27/62(R,I,M,JP,20060101,20051220,A,L) G01N-

27/62(R,I,M,JP,20060101,20051220,C,L) G01N-

27/64(R,I,M,JP,20060101,20051220,A,F) G01N-

27/64(R,I,M,JP,20060101,20051220,C,F) G01N-

33/483(R,I,M,JP,20060101,20051220,A,L) G01N-

33/483(R,I,M,JP,20060101,20051220,C,L) G01N-

33/53(R,I,M,JP,20060101,20051220,A,L) G01N-

33/53(R,I,M,JP,20060101,20051220,C,L) G01N-

33/94(R,I,M,EP,20060101,20051008,A) G01N-33/94(R,I,M,EP,20060101,20051008,C)

G01N-37/00(R,I,M,JP,20060101,20051220,A,L) G01N-

37/00(R,I,M,JP,20060101,20051220,C,L) H01J-49/02(R,I,M,EP,20060101,20051008,C)

H01J-49/04(R,I,M,EP,20060101,20051008,A) H01J-

49/10(R,I,M,EP,20060101,20051008,C) H01J-49/16(R,I,M,EP,20060101,20051008,A)

Current ECLA class: A61K-47/48T2C8H C07K-14/00 G01N-33/94D H01J-49/04 H01J-49/16A

Current ECLA ICO class: M07K-203:00 S01N-415:00 T01J-249:04B T01J-249:04S1

Current US Class (main): 250-281000

Current US Class (secondary): 250-288000 422-068100

Original US Class (main): 250281

Original US Class (secondary): 250288 42268.1

Original Abstract:

The present invention relates to a probe for the analysis of one or more analytes, particularly proteins or compounds capable of binding or otherwise interacting therewith, by laser desorption/ionization mass spectrometry, more particularly MALDI MS. It also

relates to a protein microarray, a method of producing a protein microarray and a method of analyzing a protein microarray. The probe comprises a support having an electroconductive target surface thereon characterized in that the target surface comprises a micro array having a plurality of discrete target areas presenting one or more analyte capture moieties. Each discrete target area has an area of less than $1000 \text{ } \mu\text{m}^2$, more preferably still less than $500 \text{ } \mu\text{m}^2$, and more preferably still less than $100 \text{ } \mu\text{m}^2$.

Claim:

What is claimed is:

1. 1. A probe, for use with a laser desorption/ionisation mass spectrometer, comprising a support having an electroconductive target surface thereon wherein the target surface comprises a layer that is resistant to non-specific protein binding, said layer incorporating protein repellent molecules and one or more high affinity analyte capture moieties, wherein said high affinity analyte capture moieties are incorporated homogeneously in said layer in small proportions relative to the protein repellent molecules.

WIPO

Publication No. WO 2003054543 A2 (Update 200355 B)

Publication Date: 20030703

PROBE FOR MASS SPECTROMETRY

SONDE POUR SPECTROMETRIE DE MASSE

Assignee: (*except US*) SENSE PROTEOMIC LIMITED, The Babraham, Babraham Hall, Babraham, Cambridge CB2 4AT, GB Residence: GB Nationality: GB (SENS-N)

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BLACKBURN, Jonathan, M., The Babraham, Babraham Hall, Babraham, Cambridge CB2 4AT, GB Residence: GB Nationality: GB

Agent: STRATAGEM IPM LTD, The Old Rectory, Nedging Tye, Ipswich IP7 7HQ, GB Language: EN (56 pages, 19 drawings)

Application: WO 2002EP14859 A 20021220 (Local application)

Priority: GB 200130747 A 20011221

GB 200216387 A 20020715

GB 200224872 A 20021025

Designated States: (National Original) AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ

UA UG US UZ VC VN YU ZA ZM ZW

(Regional Original) AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

Original IPC: G01N-33/543(A)

Current IPC: A61K-47/48(R,I,M,EP,20060101,20051008,A) A61K-
47/48(R,I,M,EP,20060101,20051008,C) C07K-14/00(R,I,M,EP,20060101,20051008,A)
C07K-14/00(R,I,M,EP,20060101,20051008,C) G01N-
27/62(R,I,M,JP,20060101,20051220,A,L) G01N-
27/62(R,I,M,JP,20060101,20051220,C,L) G01N-
27/64(R,I,M,JP,20060101,20051220,A,F) G01N-
27/64(R,I,M,JP,20060101,20051220,C,F) G01N-
33/483(R,I,M,JP,20060101,20051220,A,L) G01N-
33/483(R,I,M,JP,20060101,20051220,C,L) G01N-
33/53(R,I,M,JP,20060101,20051220,A,L) G01N-
33/53(R,I,M,JP,20060101,20051220,C,L) G01N-
33/94(R,I,M,EP,20060101,20051008,A) G01N-33/94(R,I,M,EP,20060101,20051008,C)
G01N-37/00(R,I,M,JP,20060101,20051220,A,L) G01N-
37/00(R,I,M,JP,20060101,20051220,C,L) H01J-49/02(R,I,M,EP,20060101,20051008,C)
H01J-49/04(R,I,M,EP,20060101,20051008,A) H01J-
49/10(R,I,M,EP,20060101,20051008,C) H01J-49/16(R,I,M,EP,20060101,20051008,A)
Current ECLA class: A61K-47/48T2C8H C07K-14/00 G01N-33/94D H01J-49/04 H01J-
49/16A

Current ECLA ICO class: M07K-203:00 S01N-415:00 T01J-249:04B T01J-249:04S1

Original Abstract:

The present invention relates to a probe for the analysis of one or more analytes, particularly proteins or compounds capable of binding or otherwise interacting therewith, by laser desorption/ ionisation mass spectrometry, more particularly MALDI MS. It also relates to a protein microarray, a method of producing a protein microarray and a method of analysing a protein microarray. The probe comprises a support having an electroconductive target surface thereon characterized in that the target surface comprises a micro array having a plurality of discrete target areas presenting one or more analyte capture moieties. Each discrete target area has an area of less than 1000microm², more preferably still less than 500microm², and more preferably still less than 100microm².

L'invention concerne une sonde destinee a l'analyse d'un ou de plusieurs analytes, en particulier de proteines ou de composes pouvant se lier ou interagir avec cette sonde, par spectrometrie de masse d'ionisation/desorption laser, plus particulierement par spectrometrie de masse MALDI. Elle concerne aussi un jeu ordonne de micro-echantillons proteiques, un procede permettant de le produire et un procede d'analyse l'utilisant. La sonde comprend un support comportant une surface cible electroconductrice caracterisee en ce que la surface cible comprend un jeu ordonne de micro-zones cibles discretees presentant une ou plusieurs entites de capture d'analyte. Chaque zone cible discretee possede une surface inferieure a 1000microm², de preference inferieure a 500microm², et preferablement inferieure a 100microm².

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